UNITED STATES TELEPHONE ASSOCIATION

Post-Retirement Health Care Study

TELCO Retirement Rates

Age	Rate of Retirement
55-61	9.54%
62	25.00%
63	10.00%
64	10.00%
65	67.00%
66-69	10.00%
70	100.00%

Comparison of TELCO Turnover Rates vs. "Standard" Rates

Probability of Remaining in Service Until Age 55

Table	T-1	TELCO T-2	GNP T-6	T-11
Current Age				
30	.743	.505	.250	.013
35	.873	.650	.363	.047
40	.958	.811	.510	.141
45	.995	.935	.687	.344
50	1.000	.992	.871	.664

Notes

1. Standard Tables in use range from T-1 (most conservative) through T-11 (least conservative). T-6 represents mid-point of range.
2. TELCO utilizes customized assumption most closely approximated by T-2.
3. Supporting evidence for low incidence of turnover at TELCO relative to national average can be seen by the higher average age and past service of TELCO employees relative to average age and service of national working population.

UNITED STATES TELEPHONE ASSOCIATION

Post-Retirement Health Care Study
Summary of Data on National Prevalence of
Post-Retirement Medical Benefit Plans
(Source = United States General Accounting Office)

Covered Employees* by Industry

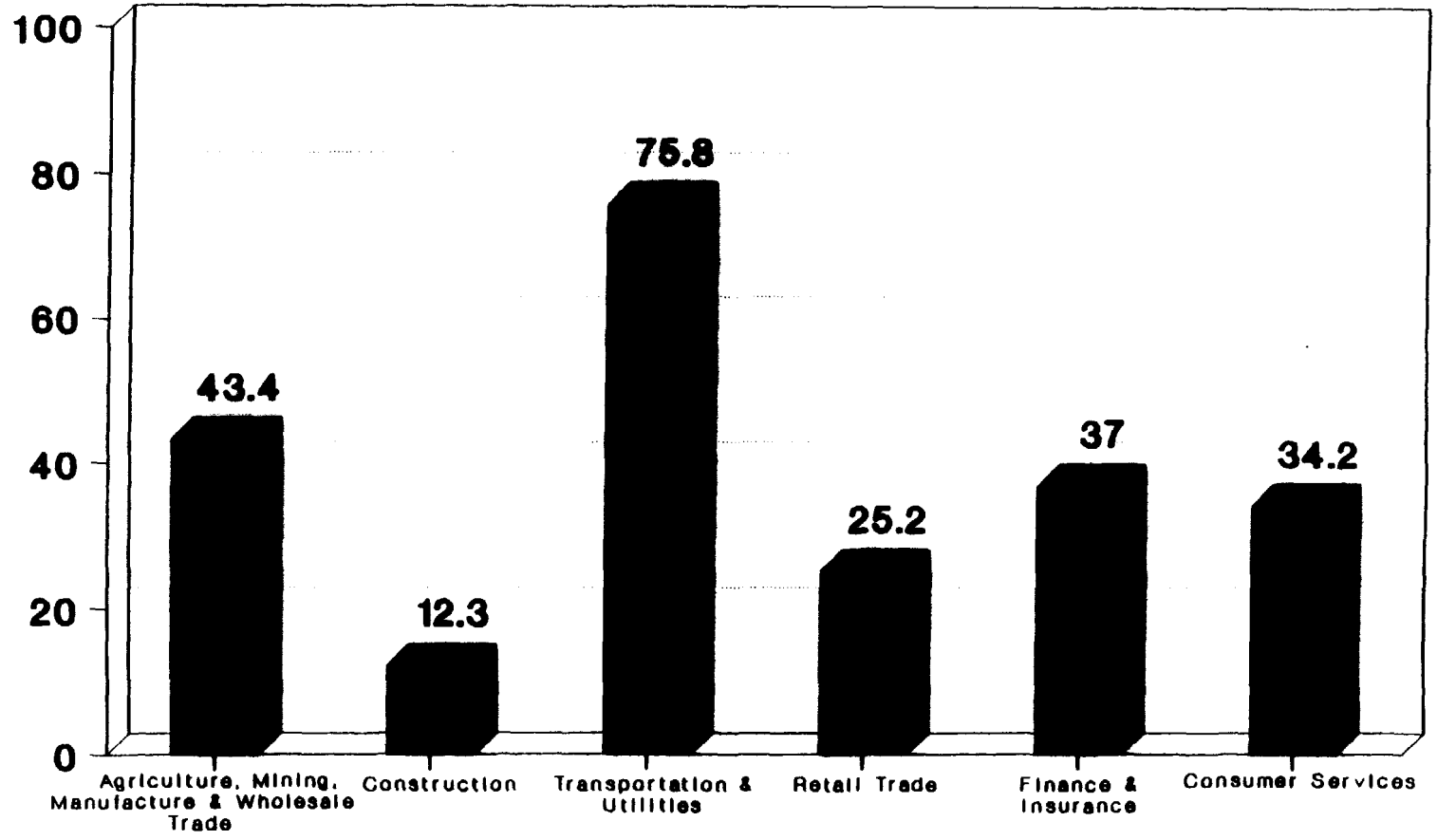
Industry	Total Employees	Covered Employees	% Total Employees Who Are Covered	% of Covered Employees in Industry
Agriculture, Mining, Manufacture & Wholesale Trade	26,729,660	11,602,872	43.4%	30.17%
Construction	4,592,367	562,891	12.3%	1.46%
Transportation & Utilities	11,674,827	8,853,209	75.8%	23.02%
Retail Trade	15,717,209	3,962,734	25.2%	10.31%
Finance & Insurance	28,210,193	10,431,800	37.0%	27.13%
Consumer Services	8,895,653	3,040,556	34.2%	7.91%
TOTAL	95,819,909	38,454,062	40.1%	100.00%

Covered Employees* by Company Size

Company Size	Total Employees	Covered Employees	% Total Employees Who Are Covered	% of Covered Employees by Company Size
1-24 Employees	13,384,195	556,209	4.2%	1.45%
25-99 Employees	12,713,231	1,663,938	13.1%	4.33%
100-499 Employees	19,631,184	3,847,903	19.6%	10.00%
500+ Employees	50,091,299	32,386,012	64.7%	84.22%
TOTAL	95,819,909	38,454,062	40.1%	100.00%

*Covered Employees means employees who work for companies which sponsor post-retirement medical plans. The GAO estimates that only 30.7 million of the 38.5 million covered employees actually could potentially qualify to receive coverage from company sponsored plans. The remaining 7.8 million employees represent those working for non-covered groups within the company (e.g. a subsidiary which does not participate in the company's plan) or employees who are covered by multi-employer plans which are not subject to SFAS 106.

United States Telephone Association
Post-Retirement Health Care Study
Summary of Data on National Prevalence of Post-Retirement Medical Benefit Plans

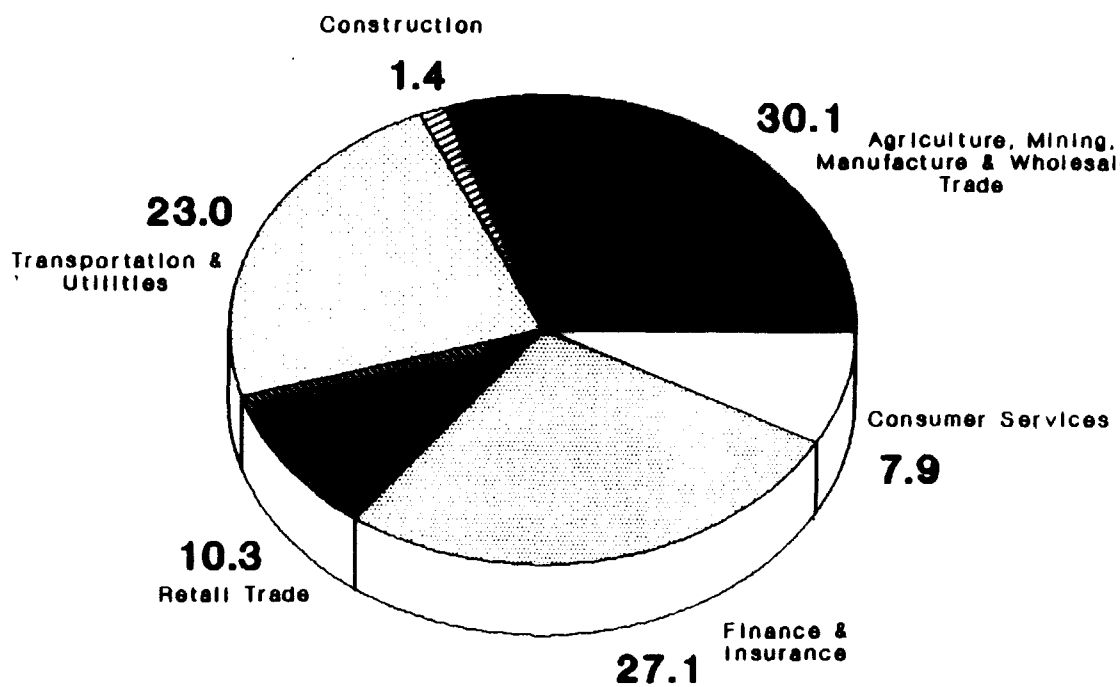


% Total EE's Who Are Covered by Industry

(Source = United States General Accounting Office)

Godwins

United States Telephone Association
Post-Retirement Health Care Study
Summary of Data on National Prevalence of Post-Retirement Medical Benefit Plans

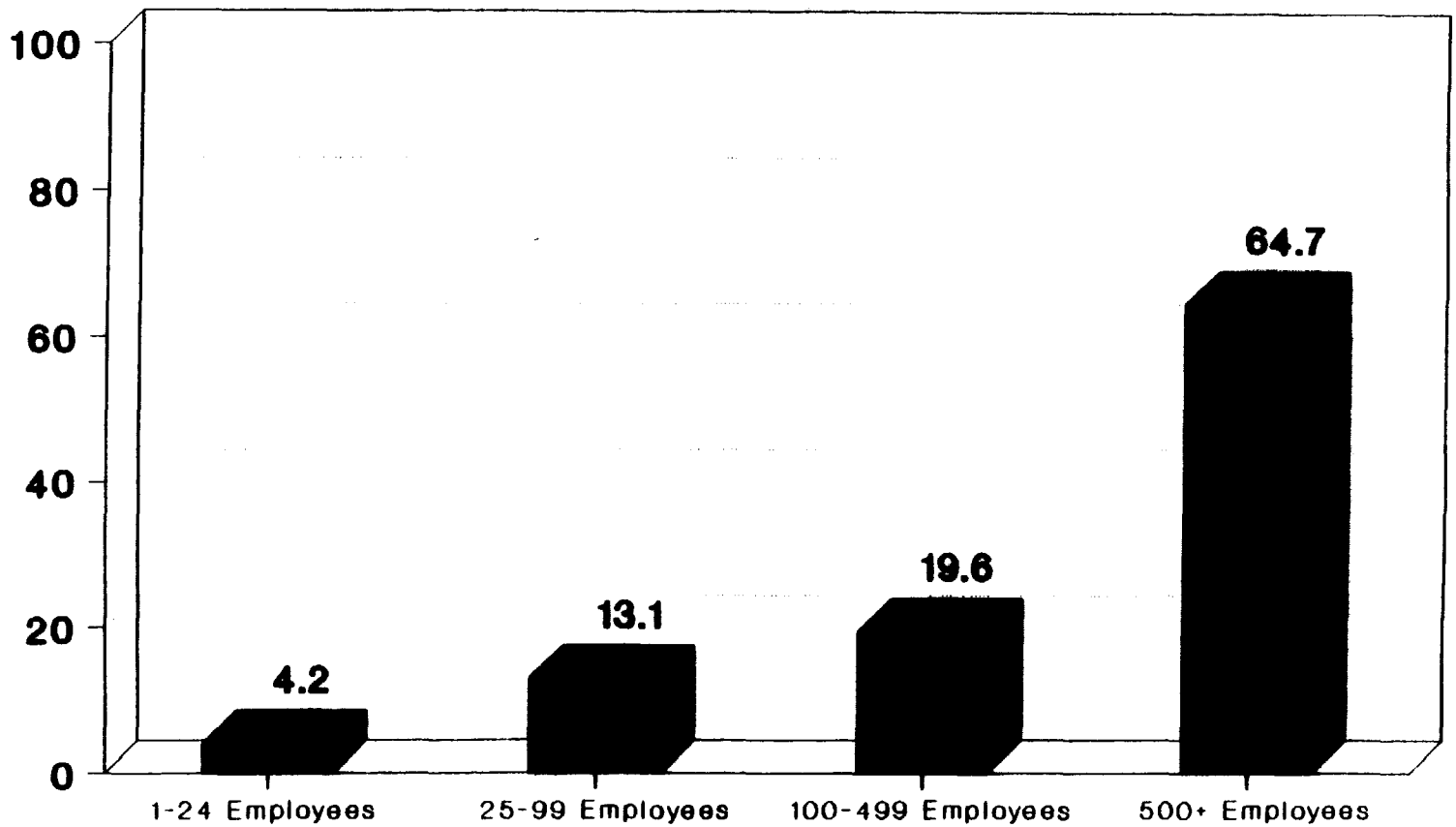


% of Covered Employees by Industry

(Source = United States General Accounting Office)

Godwins

United States Telephone Association
Post-Retirement Health Care Study
Summary of Data on National Prevalence of Post-Retirement Medical Benefit Plans

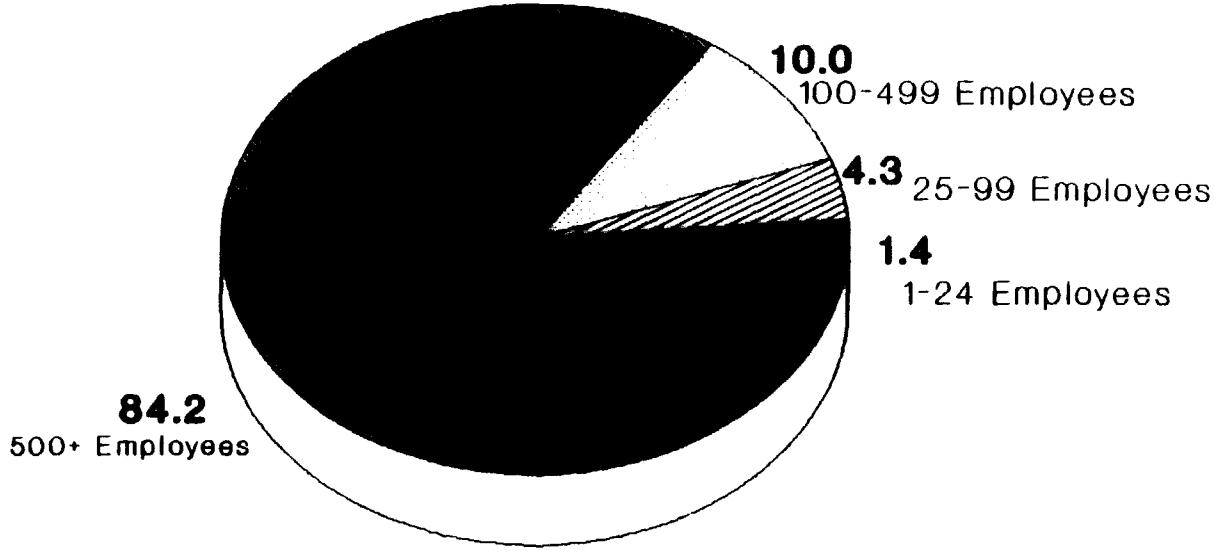


% Total EE's Covered by Company Size

(Source = United States General Accounting Office)

Godwins

United States Telephone Association
Post-Retirement Health Care Study
Summary of Data on National Prevalence of Post-Retirement Medical Benefit Plans



% of Covered Employees by Company Size

(Source = United States General Accounting Office)

Godwins

APPENDIX B - METHODS AND ASSUMPTIONS

Below is a description of the key methods and assumptions used for the derivation of the Demographic Adjustment as well as the basic BLI calculations. The methods and assumptions utilized in developing the other Adjustments are sufficiently documented in Section III.

Demographic Adjustment

The three adjustments making up the Demographic Adjustment were developed by calculating and comparing SFAS 106 costs for sample populations incorporating the GNP and TELCO demographic characteristics based on the age and service distribution of GNP and TELCO employees respectively. The calculations utilized pre- and post-65 per capita claim amounts that bear the same relationships to each other as do the pre- and post-65 BLIs for GNP and TELCO. All assumptions other than withdrawal, and retirement age (already discussed) were as follows:

discount rate - 8.13%
trend rate - 10.08% in 1991 decreasing gradually to 5.56% for the year 2006 and later
retirement eligibility - 55
amortization period for transition obligation - 20 years
percent married - 65%

BLI Calculations

The calculation of individual plan Benefit Level Indicators used the following data and methods.

A data base of annual claim amount distributions was used, based on the experience of 39,436 retirees who participate in employer sponsored post-retirement medical programs administered by a large national insurance company. For pre- and post-65 claimants, frequency weights, monetary weights, hospital/

drug/other ratios and Medicare reimbursements by type were developed. This data base has 35 claim ranges with average claim amounts in each range from $15 to $48,753.

The calculations also used our data base of the post-retirement medical plan provisions for 830 private sector employers. For both comprehensive and base plus plans the following data items were available;

- hospital room and board, either as days covered or a percentage
- surgical coverage
- in-patient physician coverage
- out-patient physician coverage
- diagnostic coverage
- prescription drug coverage, either percentage or flat dollar co-pay
- major medical deductibles
- major medical co-pay percentage
- out-of-pocket maximums
- annual/lifetime maximums
- Medicare integration method (i.e., carve-out, supplement or coordination of benefits)
- participant and dependent contribution rates

These provisions are available separately for pre- and post-65 claimants.

A particular plan's gross BLI was computed by determining how much the plan would reimburse at each claim amount in the distribution data base. The reimbursement amount was determined separately for each type of charge; e.g., hospital, drug, etc. Medicare reimbursement was taken into account explicitly for each type of charge based on the form of Medicare integration in the plan. Each reimbursement was then divided by the corresponding claim to obtain a reimbursement ratio. These ratios were then weighted by the claim amount weights in the distribution to determine the gross BLI.

Per retiree contribution rates were then compared to per retiree claim amounts, and that ratio was used as an offset to the gross BLI to determine the final net pre- and post-65 BLIs for each company in the data base.

After average pre- and post-65 BLIs had been determined for GNP and TELCO (see Section III page 11 for methodology), pre- and post-65 weightings were calculated as the percentages of total SFAS 106 cost associated with pre- and post-65 claims, determined using the same methodology as for the Demographic Adjustment. These were then applied to the pre- and post-65 BLIs to develop GNP BLI and TELCO BLI.

By way of illustration, suppose a comprehensive plan pays 80% after a $200 deductible, subject to an out-of-pocket maximum of $1,500. After 65, Medicare integration is 'Supplement'. Participants contribute $10 per month.

In the $4,000 - $5,000 claim range, for example, we find the average claim to be $4,479. Since this is a comprehensive plan, we derive the pre-65 reimbursement utilizing the total claim amount, that is (4,479 - 200) times 80%, or $3,423. The out-of-pocket maximum has not been met. Therefore, the pre-65 reimbursement ratio in the charge range is 0.7642. The ratios for all ranges are averaged using weights given by the distribution table to determine the gross pre-65 BLI.

The post-65 reimbursement recognizes Medicare integration, in this example the method is Medicare Supplement. We determine the breakdown of charges to be $1,776 for hospital, $567 for prescription drugs, and $2,136 for all other charges. Total Medicare reimbursement is $2,047 (calculated explicitly from

Medicare provisions) and is immediately taken out; in this case $1,177 from hospital, $870 from other medical charges and nothing from drug charges. The plan provisions are then applied to the balance of $2,432, giving a plan reimbursement of $1,786 ((2,432 - 200) times 80%). This produces a post-65 reimbursement ratio of 0.3987 for this claim range. As with the pre-65 case the ratios for all ranges are then averaged using weights given by the distribution table to determine the gross post-65 BLI.

The gross BLIs are then adjusted to reflect participant contributions. Our example here might produce gross BLIs of 0.85 pre-65 and 0.32 post-65. The participant contribution of $10 per month translates into a reduction in the gross BLIs of 0.03 pre-65 and 0.04 post-65, giving final BLIs of 0.82 and 0.28 respectively.

NYASZ #157

Appendix C

Part I: Derivation of the Model

I. Households

All households are assumed to be identical and obtain utility from money and leisure as well as each of the m produced goods. Each household solves the following maximization problem

$$(A1)\quad U^* = \max_{(C_i,M,N)} \left(C^{\gamma}(M/P)^{1-\gamma} - (\phi N^{\eta+1})^{1/\eta}\right)$$

subject to the constraint that

$$(A2)\quad M + \Sigma_i P_i C_i = I$$

where

$$(A3)\quad C = (\Sigma_i \alpha_i C_i^{(\theta-1)/\theta})^{\theta/(\theta-1)}$$

$$(A4)\quad P = (\Sigma_i \alpha_i^{\theta} P_i^{1-\theta})^{1/(1-\theta)}$$

and C_i is the consumption of produced good i, P_i is the nominal price of produced good i, M is the amount of money held at the end of the period, N is the amount of labor supplied, I is the total nominal value of resources available to the household, C is the bundle of consumption goods defined by the aggregator function in (A3), and P is a price index defined in (A4). (Note that the price index P in (A4) is not the fixed-weight GNP price index. The solution of the model produces prices for each of the m goods which can then be combined to calculate the appropriate fixed-weight GNP price index.) The parameters of the utility function are γ, which equals the share of the household's nominal expenditure on produced goods rather than on money balances; θ, which is the elasticity of substitution between the consumption of any pair of goods; α_i, i = 1,...,m, which indicate the weight of each good in the household's utility function; η, which is the elasticity of labor supply; and ϕ which characterizes the degree of disutility of labor.

The utility function in equation (A1) is additively separable between (C_i,M) and N. This separability allows us to solve the household's maximization problem in two stages. First, we will maximize utility with respect to C_i and M, and then we will choose the utility-maximizing level of labor supply N. Choosing C_i and M to maximize the utility function in (A1) subject to the constraint in (A2) yields the following first-order conditions:

$$(A5)\quad \alpha_i C_i^{-1/\theta} \gamma C^{\gamma-1+1/\theta} (M/P)^{1-\gamma} = \mu P_i$$

$$(A6)\quad (1-\gamma) C^{\gamma} (M/P)^{-\gamma}/P = \mu$$

where μ is the Lagrange multiplier on the constraint (A2).

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Combining the first-order conditions (A5) and (A6) yields

(A7) $\alpha_i C_i^{-1/\theta} \gamma C^{(1-\theta)/\theta} M = (1-\gamma) P_i$

Multiplying both sides of (A7) by C_i and then summing over all i yields

(A8) $\Sigma_i \; P_i C_i = (\gamma/(1-\gamma))\; M$

Substituting (A8) into (A2) yields

(A9) $M = (1-\gamma) I$

Substituting (A9) into (A7), summing over all i, and using the definition of the price index in (A4) yields

(A10) $PC = \gamma I$

Substituting (A9) into (A7) and then using (A10) yields the demand for good i

(A11) $C_i = \alpha_i^{\theta} (P_i/P)^{-\theta} \gamma I/P$

Substituting (A9) into (A11) yields

(A12) $C_i = \alpha_i^{\theta} (P_i/P)^{-\theta} (\gamma/(1-\gamma)) M/P$

Having solved for the optimal values of C_i and M, we now solve for the optimal value of labor supply N. First, substitute the optimal values of C_i (eq. A11) and M (eq. A9) into the utility function in (A1) to obtain

(A13) $U^* = \max_N \; (\gamma^{\gamma}(1-\gamma)^{1-\gamma}(I/P) - (\phi N^{\eta+1})^{1/\eta})$

subject to $I = wN + rK^* + M + \pi$, where π is the (present value of) post-retirement health benefits to be received by the household.

The first-order condition for labor supply N is

(A14) $\gamma^{\gamma}(1-\gamma)^{1-\gamma}(w/P) = ((\eta+1)/\eta)(\phi N)^{1/\eta}$

which can be solved to obtain N*, the optimal amount of labor supplied

(A15) $N^* = \nu(w/P)^{\eta}$

where $\nu = [\gamma^{\gamma}(1-\gamma)^{1-\gamma}\eta/(\eta+1)]^{\eta}\phi^{-1}$

II. Firms

Each of the m goods is produced by competitive firms with Cobb-Douglas production functions. The total production of good i, Y_i, is given by the production function

(A16) $Y_i = A_i N_i^{\rho_i} K_i^{1-\rho_i}$ $\quad i = 1,\ldots,m$

The firms are assumed to be competitive and thus take the nominal price of their output, P_i, the nominal rental price of capital, r, and the nominal price of labor, $D_i w$, as fixed. Note that the nominal price of labor consists of two parts: w reflects the nominal wage rate excluding the cost of post-retirement health benefits covered by FAS 106. The factor D_i reflects the impact on the cost per unit of labor of post-retirement health benefits covered by FAS 106. For firms that do not offer post-retirement health benefits, $D_i = 1$. For firms that offer such benefits, $D_i > 1$. Competitive firms choose N_i and K_i to maximize

(A17) $P_i A_i N_i^{\rho_i} K_i^{1-\rho_i} - wD_i N_i - rK_i$ $\quad i = 1,\ldots,m$

The first-order conditions for labor and capital are

(A18) $\rho_i P_i Y_i / N_i = wD_i$ $\quad i = 1,\ldots,m$

(A19) $(1-\rho_i) P_i Y_i / K_i = r$ $\quad i = 1,\ldots,m$

Given the nominal wage w and the FAS 106 factor D_i, (A18) determines the amount of labor demanded in sector i; given the rental price of capital, (A19) determines the amount of capital demanded in sector i.

III. Market Equilibrium

Equilibrium in the factor markets requires that the aggregate amount of labor demanded equal the supply of labor and the aggregate amount of capital demanded equal the supply of capital:

(A20) $\Sigma_i N_i = N^*$

(A21) $\Sigma_i K_i = K^*$

The amount of money demanded equals the amount initially held by consumers

(A22) $M = M^*$

The amount of good i produced must equal the amount of good i demanded, so that using (A12) we obtain

(A23) $Y_i = \alpha_i^{\theta} (P_i/P)^{-\theta} (\gamma/(1-\gamma)) M/P$

The nominal value of production must equal the nominal value of total factor payments, including the (present value of the) cost of post-retirement health benefits,

$$(A24) \quad \Sigma_i P_i Y_i = rK^* + w\Sigma_i D_i N_i$$

The nominal value of total resources available to the household, I, equals the initial holding of money M^* plus capital income rK^*, wage income, $w\Sigma_i N_i$, and the present value of post retirement health benefits $\pi = w\Sigma_i (D_i - 1)N_i$ so that

$$(A25) \quad I = M^* + rK^* + w\Sigma_i D_i N_i$$

The solution to the model consists of the equilibrium conditions (A20) - (A25), the production functions (A16), the labor demand equations (A18), the capital demand equations (A19), and the definition of the price index (A4).

Part II: Calibration of the model

The model is calibrated so that in the absence of FAS 106 it yields an allocation of labor across sectors that matches the actual allocation of labor across sectors. It is also calibrated such that in the absence of FAS 106, all nominal prices are equal to one.

Inputs to the calibration procedure:

η, the elasticity of labor supply

θ, the elasticity of substitution between the consumption of any two goods

γ, the share of nominal expenditure devoted to produced goods

N_o^*, the initial total amount of labor to be allocated across sectors

K*, the fixed total amount of capital to be allocated across sectors

ρ_i, the share of labor in total cost in sector i

D_i, the FAS 106 cost factor in sector i (equal to 1 in the absence of FAS 106)

$s^N_i = N_i/N^*$, the fraction of labor employed in sector i

In the initial calibration, all nominal prices are set equal to one

(B1) $P_i = 1, \qquad i = 1,\ldots,m$

(B2) $P = 1$

The amount of labor initially used in each sector follows directly from the fraction of the labor force employed in sector i, s^N_i, and the total amount of labor employed, N_o^*

(B3) $N_i = s^N_i \, N_o^* \qquad i = 1,\ldots,m$

Define $s^Y_i = P_iY_i/\Sigma_iP_iY_i$ to be the share of sector i's output P_iY_i in total output $\Sigma_iP_iY_i$. Then using the labor demand equation (A18) and the fact that the total amount of labor employed is N_o^*, it can be shown that

(B4) $s^Y_i = (D_is^N_i/\rho_i)/\Sigma_i(D_is^N_i/\rho_i) \qquad i = 1,\ldots,m$

Using the capital demand equation (A19) and the fact that the total amount of capital used is K^*, it can be shown that

(B5) $K_i = [(1-\rho_i)s^Y_i/\Sigma_i(1-\rho_i)s^Y_i] \, K^* \qquad i = 1,\ldots,m$

Normalize $A_1 = 1$ so that the production function in the first sector is

(B6) $Y_1 = N_1^{\rho_1} K_1^{1-\rho_1}$

Using Y_1 from (B6), the nominal wage and the nominal rental price of capital can be determined from the first-order conditions (A18) and (A19) for sector 1 to obtain

(B7) $w = \rho_1 Y_1 P_1/(D_1 N_1)$

(B8) $r = (1-\rho_1) Y_1 P_1/K_1$

Now calculate ν in the labor supply curve (eq. A15) as

(B9) $\nu = N_o^* (P/w)^{\eta}$

To calibrate A_i, $i = 2,\ldots,m$, substitute the production function (A16) into the first-order condition for labor (A18) and set $P_i = 1$ (eq. B1) to obtain

(B10) $A_i = (D_i w/\rho_i)(N_i/K_i)^{1-\rho_i}$ $\qquad i = 2,\ldots,m$

Now set all prices equal to 1 in the equilibrium condition (A23), and use (A22) to obtain

(B11) $Y_i = \alpha_i^{\theta}(\gamma/(1-\gamma))M^*$

Summing (B11) over all i we obtain

(B12) $\Sigma_i Y_i = (\gamma/(1-\gamma))M^* \Sigma_i \alpha_i^{\theta}$

Now observe that with $P = P_i = 1$ for all i, equation (A4) implies that

(B13) $\Sigma_i \alpha_i^{\theta} = 1$

Substituting (B13) into (B12) and rearranging yields

(B14) $M^* = ((1-\gamma)/\gamma)\ \Sigma_i Y_i$

Finally, substituting (B14) into (B11) and recalling that when $P_i = P = 1$, $s^Y_i = Y_i/\Sigma Y_i$, we obtain

(B15) $\alpha_i^{\theta} = s^Y_i$ $\qquad i = 1,\ldots,m.$

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Attachment D - 1992 Explanation of Macroeconomic Model

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of:	)	
	)	
Treatment of Local Exchange Carrier Tariffs Implementing Statement of Financial Accounting Standards, "Employers Accounting for Postretirement Benefits Other Than Pensions"	)	CC Docket No. 92-101
Bell Atlantic Tariff F.C.C. No. 1	)	Transmittal No. 707
U S West Communications, Inc. Tariff F.C.C. Nos. 1 and 4	)	Transmittal No. 246
Pacific Bell Tariff F.C.C. No. 128	)	Transmittal No. 1579

DIRECT CASE
OF THE
UNITED STATES TELEPHONE ASSOCIATION

I. INTRODUCTION.

The United States Telephone Association (USTA) respectfully submits its direct case in the above-referenced proceeding. USTA is the principal trade association of the exchange carrier industry. Its membership of approximately 1100 local telephone companies includes the carriers listed in the caption, which have filed tariffs to increase their price cap index levels as a result of their implementation of the Statement of Financial Accounting Standards - 106, (SFAS-106), "Employers Accounting for Postretirement Benefits Other Than Pensions," (OPEB). USTA also represents all of the other price cap exchange carriers and the majority of small and mid-sized non-price cap carriers who may elect price cap regulation in the future. Thus, a significant

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number of exchange carriers could be affected by Common Carrier Bureau (Bureau) action in this docket.

In the three tariff transmittals before the Commission, Bell Atlantic, U S West and Pacific Bell state that the incremental costs of implementing SFAS-106 should be reflected as exogenous cost changes since these costs meet the requirements for exogenous treatment and are not reflected in the price cap formula. USTA commissioned the study undertaken by Godwins, "Post-Retirement Health Care Study Comparison of TELCO Demographic and Economic Structures and Actuarial Basis National Averages" (1992) submitted by Bell Atlantic and U S West as support for their transmittals. The study may also be relied upon by other exchange carriers in their direct cases.

II. RESPONSE TO PARAGRAPH 16 OF THE ORDER INVESTIGATION AND SUSPENSION.

In paragraph 16 the Bureau requests information to evaluate a macroeconomic model and its results. Attached hereto is a point-by-point response to the issues raised in that paragraph as well as a discussion of the type of model used by Godwins.

The macroeconomic model used in the Godwins report is a classical general equilibrium model. It meets all of the necessary characteristics for a model. It also provides a conservative approach by calculating the impact on the macroeconomy after the economy fully responds to SFAS-106. This

helps to guard against understating the impact of SFAS-106 on GNP-PI.

In addressing the issues raised in paragraph 16, the attachment describes the calibration procedures used to match the numerical results produced by the model with U.S. data. It is important to note that the model is specifically designed not to be a forecasting model, but instead to directly focus on how much different GNP-PI is as a result of the introduction of SFAS-106.

III. CONCLUSION.

The OPEB costs at issue here are exogenous. The change in the accounting for these costs is outside the control of exchange carriers. The Financial Accounting Standards Board requires mandatory adoption of SFAS-106 and the Commission has also required mandatory adoption of SFAS-106.[1] Using the results of the Godwins study the impact of implementing SFAS-106 will not be double-counted within the context of the price cap formula. The Godwins study identifies and allows for the elimination of the impact SFAS-106 will have on GNP-PI. In fact, the Commission has stated that SFAS-106 would, presumably, be an exogenous cost for

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[1] In the Matter of Southwestern Bell, GTE Service Corporation, Notification of Intent to Adopt Statement of Financial Accounting Standards No. 106, Employers' Accounting for Postretirement Benefits Other Than Pensions, AAD 91-80, Order, FCC 91-1582, released December 26, 1991.

price cap purposes.[2]

Based on the foregoing, USTA urges the Bureau to recognize OPEB costs as exogenous for price cap purposes.

Respectfully submitted,

UNITED STATES TELEPHONE ASSOCIATION

By Linda Kent

Martin T. McCue
General Counsel

Linda Kent
Associate General Counsel

900 19th Street, NW, Suite 800
Washington, D.C. 20006-2105
(202) 835-3100

June 1, 1992

Attachment

[2] In the Matter of American Telephone and Telegraph Company Revisions to Tariff F.C.C. Nos. 1, 2 and 13, Memorandum Opinion and Order, released June 27, 1990 at paragraph 4.

Response to Paragraph 16

of FCC Order of Investigation and Suspension

CC Docket No. 92 - 101

May 26, 1992

Godwins

Paragraph 16 requests information that can be used in a serious impartial evaluation of a macroeconomic model and its results. Ideally, enough information should be provided so that the numerical results produced by a macroeconomic model can be reproduced, or at least checked, by an outside reader with a professional training in economics. In writing the macroeconomic portions of the Godwins report we tried to anticipate the need for reproducibility and included in the report enough information to reproduce the numerical results of the macroeconomic model (See Appendix C of the Godwins report). However, the explanation in Appendix C of the Godwins report is relatively brief, so we will use the opportunity presented by Paragraph 16 to elaborate on various aspects of the macroeconomic model and its calibration.

Before presenting a detailed point-by-point response to items raised in Paragraph 16, it might be helpful to discuss the type of macroeconomic model used in the Godwins report and to contrast this model with conventional large-scale short-run econometric forecasting models. The reason for contrasting the two types of models is that the requests in Paragraph 16 constitute an appropriate set of questions for scrutinizing the results of a conventional large-scale econometric forecasting model. However, some of the questions are not germane for scrutinizing the macroeconomic model used in the Godwins report.

The macroeconomic model used in the Godwins report is a classical general equilibrium model. As discussed in the Godwins report on pp. 26-27, the choice of a type of macroeconomic model for examining the effect on GNP-PI of the introduction of SFAS 106 was guided by a list of five desirable characteristics for a model:

(1) The model should be a multi-sector model allowing for some firms to offer post-retirement health benefits while other firms do not offer such benefits.

(2) The model should explain how production costs are related to the costs of labor and other inputs, and should allow for the possibility of substituting capital for labor as labor becomes more expensive.

(3) The model should provide a specification of the demand for goods related to the overall price level as well as to prices of goods in each sector.

(4) The model should be tractable so that numerical solutions can be computed and readily interpreted.

(5) The model should be internally consistent and based on sound economic foundations.

The classical general equilibrium model used in the Godwins report meets all five of these criteria. However, large-scale commercial econometric models do not meet all of these criteria. In particular, most large-scale commercial econometric models do not meet criteria (4)

and (5). These models typically contain several hundred, or even over a thousand, equations and variables to be forecast. In addition to the sheer difficulty of tracing the effects of so many variables, the forecasts produced by commercial forecasters generally are based also on other factors such as time-series analysis, current data analysis, and "judgment". The fact that the forecasts of these models are based significantly on judgment and current data analysis makes it very difficult for an impartial observer to reproduce the results of these models and obscures the ability to readily interpret the forecasts produced by these commercial forecasters. Commercial large-scale econometric models in general have also been criticized for failure to satisfy criterion (5) that they be internally consistent and based on sound economic foundations. In light of the five desirable characteristics listed above, it was decided that a classical general equilibrium model would be preferable to a large-scale commercial econometric model for the purpose of evaluating the effect on GNP-PI of the introduction of SFAS 106.

An additional consideration that led to the choice of the classical general equilibrium model is related to the timing of the responses to the introduction of SFAS 106. The classical general equilibrium model is intended to gauge the effects of changes after the economy has returned to equilibrium, which may take several calendar quarters or years. This model does not address the extremely difficult task of predicting the dynamic responses over the short-run. By contrast, large-scale econometric models deliver a series of quarterly forecasts of GNP and other macroeconomic variables. However, in our judgment, short-run dynamic behavior is extremely difficult to forecast. Although these models do produce short-run forecasts, we would be cautious in interpreting the timing implied by these short-run forecasts. We decided to sidestep this difficult problem by using the conservative approach of calculating the impact on the macroeconomy after the economy fully responds to SFAS 106. The sense in which this approach is conservative is that it probably will overstate the short-run impact on macroeconomic variables, and thus helps guard against understating the impact on GNP-PI.

Now we will present a detailed point-by-point response to the issues raised in paragraph 16. We will structure the responses according to the following list of requests in Paragraph 16:

(1) fully describe and document the macroeconomic model, including

- (a) the method of estimation
- (b) parameter estimates
- (c) summary statistics

(2) provide the same information as in (1) for any alternate functional forms that were used

(3) provide the data used to estimate the model

(4) provide the data used in making forecasts from the model

(5) provide the results of any sensitivity analyses performed to determine the effect of using different assumptions.

Response to request (1): fully describe and document the macroeconomic model, including the method of estimation, parameter estimates, and summary statistics.

The macroeconomic model used in the Godwins report is described verbally on pp. 27-28 of the Godwins report, and a complete mathematical derivation and description of the model is presented in Part I of Appendix C, pp. 54-57. In order to apply this mathematical model to the United States, numerical values of the parameters need to be selected. In a conventional large-scale commercial econometric model, the numerical values of the parameters are typically estimated econometrically. For these models, it is important to ask about the method of estimation, the parameter estimates, and summary statistics describing the statistical properties of the parameter estimates and the model forecasts. However, the values of the parameters used in the classical general equilibrium model in the Godwins report were not econometrically estimated in the course of the preparation of the Godwins report. Instead, the numerical values of the model were calibrated so that in the baseline calculation without SFAS 106, the numerical results produced by the model matched U.S. macroeconomic data.

The calibration procedure is described in Part II of Appendix C, pp. 58-59, but here we will present a verbal description of the calibration. The utility function of households contains the following parameters:

α_1 and α_2, which measure the relative desirability to consumers of the goods produced in sectors 1 and 2: The larger is α_1 relative to α_2, the larger is the production of good 1 relative to good 2, and the larger is the share of the labor force employed in sector 1. The values of α_1 and α_2 are chosen so that in the initial equilibrium (before the introduction of SFAS 106) 68% of the labor force is employed in sector 1 (which does not offer SFAS 106 benefits) and 32% of the labor force is employed in sector 2 (which offers SFAS 106 benefits). These figures for the shares of employment in sector 1 and in sector 2 match U.S. data as indicated on page 7 of the Godwins report. (Of the 95.8 million private sector employees, 30.7 million are eligible to have a proportion of their charges in retirement met by their employer's medical plan. Thus, the share of the private sector labor force employed in sector 2 is 30.7 million/95.6 million = 32%.)

θ, which is the elasticity of substitution between the consumption of any two goods: The parameter θ equals the price of elasticity of the demand for goods. This parameter was not estimated nor was